2: Kroeber E-5 (ca. 1918) 1953
NS29 Yokuts NS29

Mill Creek and Kings River. Such groups, save for their distinctive speech, would be indistinguishable from the village communities of their neighbors if the purely local designations of the latter were replaced by appellations for the people themselves. Still fainter is the line of demarcation when the Choinimni, for instance, are called, as occasionally happens, Tishechuchi after their town Tishechu; but such terms are rare among the Yokuts. 101

For other tribes a principal and several subsidiary abodes are specified; thus the Paleuyami are identified with Altau and sometimes called Altinin, but lived also at Bekiu, Shikidapau, Holmiu, and other places. The Hometwoli lived at three principal sites, and the Chukchansi, Tachi, Yauelmani, and others dwelt from time to time, and perhaps simultaneously, at a number of places scattered over a considerable tract. These instances confirm the Yokuts divisions as true tribes.

Fully half the Yokuts tribal names end either in -amni, found also as -imni, -mina, -mani; or in -chi. The former suffix recurs added to place names among the Plains Miwok to designate the inhabitants of such and such spots, and among the Maidu as an ending of village names; the latter among the southern Miwok with the significance "people of." But the subtraction of either of these endings from the names of Yokuts tribes usually leaves only meaningless syllables; and in general the people themselves are well content to employ their little national designations without inquiring what they may denote. The few etymologies which they have ventured in response to inquiries are obviously naive and unhistorical. [192]

HABITAT.

The home of the Yokuts was the San Joaquin Valley, the entire floor of which they held, from the mouth of the river to the foot of Tehachapi Pass. In addition, they occupied the adjacent lower slopes or foothills of the Sierra Nevada, up to an altitude of a few thousand feet, from Fresno River south, but nowhere to the north of that stream. The San Joaquin River proper flows down only the lower half of the length of the valley. Above it, Kings and then Kern River also break westward from the high mountains and the latter turns north into the treeless plains. Kern River drained into Tulare Lake, formerly a large, shallow basin of water surrounded by an even more extensive tract of swamp of tules, as two or three species of rush are locally known. The swamps are now reclaimed and much of the lake is normally dry and its area under cultivation. For most of the year, formerly, the evaporation over this immense sheet sufficed to equal the intake from Kern River and other streams; in time of flood the lake might drain north through Fish Slough into Kings River. This latter stream itself, though of considerable 101 131 133 [132]

2:Kroeber E-5 (ca. 1918) 1953
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342 with rounded but vertical ends. There may be a ridgepole on two posts, with perhaps five poles planted along each side and bent over to the ridgepole. In this case the door is on one side of the front post. Or the ridgepole may be dispensed with and the poles bent all the way over or lashed together. The total length is only a dozen feet or so. The covering is of loose tule mats, each stalk wrapped to the next by a hitch in a single strand of string. Floor mats and bedding are sewn through. The Wechihit use a covering of tall *mohya* stems, reaching from the ground to the ridge, and held in place outside by several horizontal poles lashed to the framework. This type of house was called *te* or *chi*.

4. The Yaudanchi, though a hill tribe, built their principal winter houses or *te* of tule, of which a species called *shuyo* grows along streams to the very limit of the plains. This was a conical dwelling, and its most distinctive feature was a hoop at top to attach and at the same time separate the leaning poles of the framework, and leave a smoke hole. The tule mat covering was sewn as by the [361] lake tribes. The houses were placed in rows.

A larger, ridged house, with two fireplaces and a door at each end, was also built by the Yaudanchi. In this a valley influence can scarcely be questioned.

When camping well up in the hills in summer, or traveling, the Yokuts built small structures, apparently conical, covered with brush or bark.

Among the northern hill tribes, such as the Chukchansi and Gashowu, the house is also conical with a ring at the top, but usually thatched. The floor is lowered perhaps a foot with the digging stick. The door faces south, the diameter is 12 to 15 feet, the height not quite as much. Allowing for the lack of tule, this is the same house as that of the Yaudanchi, but it is called *ho*, literally "live," "sit."

5. A bark house of similar type is called *samish*. Sometimes bark is first leaned against the framework as a partial covering, then brush thatch added, and the whole held fast by bands of pliable poles or withes tied around.

It is interesting that there is no reference anywhere to tule thatching. The thickness of this rush may make its sewing or binding into mats more practicable than bundling it into thatch. The Serrano and other southern Californians also built tule mat houses, but [132] [343] the Pomo employed tule thatch.

The *ch'inis* or shade, a flat roof on posts, was used by all the Yokuts. It must have been almost indispensable in the intensely hot summers of the plains.

344 The sweat house, *mosh* or *mos*, is a true sudatory, oblong, dug down several feet, with a ridge log resting on two posts at the ends,

2: Kroeber E-5 (ca. 1918) 1953
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and dirt covered. It was small, not over 15 feet in length, and in no sense a dance house or assembly chamber. Women never entered it. It was the regular sleeping place of the older men during the winter when they were at the home village. The door faced the creek, or south, and was sometimes sheltered by parallel windbreaks. Often on retiring, the inmates sang and sweated, perhaps in competition along the two sides, the fire being added to to make the opposite row cry out first that they had enough. Then came a plunge into the stream, and a return to dry and sleep. In the morning they ran shouting to the water again. 344

There is no house for dances and rituals. The rattlesnake "stepping," the mourning ceremony, and perhaps other rites were held in large roofless inclosures of brush, a sort of fence. This is the southern California form of ceremonial structure. North of the Yokuts it reaches to the Maidu as an adjunct of the mourning ceremony.

THE FOOD PROBLEM IN CALIFORNIA.

The California Indians are perhaps the most omnivorous group of tribes on the continent. The corn, salmon, buffalo, reindeer, or seal which formed the predominant staple in other regions, did indeed have a parallel in the acorn of California; but the parallel is striking rather than intrinsic. 262

To begin with, the oak is absent from many tracts. It does not grow in the higher mountains, in the desert, on most of the immediate coast; and it is at best rare in districts like the baked plains inhabited by the southern Yokuts valley tribes, a fact that may help to explain the permanent association and commingling of the majority of these tribes with their foothill neighbors. It is true that at worst it is rarely a far journey to an abundant growth of bearing acorns anywhere in California; but the availability of such supplies was greatly diminished by the habits of intense adherence to their limited soil followed by the great majority of divisions. 137 222 262

Then, where the acorn abounded, the practices both of collecting and of treating it led directly to the utilization also of other sources of nourishment. The farmer may and does hunt, or fish, or gather wild growths; but these activities, being of a different order, are a distraction from his regular pursuits, and an adjustment is necessary. Either the pursuit of wild foods becomes a subsidiary activity, indulged in intermittently as leisure affords, and from the motive of variety rather than need, or a sexual or seasonal division becomes established, which makes the same people in part, or for part of the year, farmers and in part hunters. An inclination of this sort is not wanting in many districts of California. The dry and hot summer makes an outdoor life in the hills, near the heads of the vanish- 222 262 132 222 262

2: Kroeber E-5 (ca. 1918) 1953
NS29 Yokuts NS29

132 222 262 ing streams, a convenience and a pleasure which coincide almost exactly with the opportunity to hunt and to gather the various natural crops as they become available from month to month. The wet winter renders house life in the permanent settlement in a valley or on a river correspondingly attractive, and combines residence there with the easiest chance to fish the now enlarged streams on an extensive scale, or to pursue the swarms of arrived water fowl.

262 221 But this division was not momentous. The distances ranged over were minute. Fishing was not excluded among the hills. Deer, rabbits, and gophers could be hunted in the mild winter as well as in summer. And while acorns and other plant foods might be garnered each only over a brief season, it was an essential part of their use that much of their preparation as well as consumption should be spread through the cycle of the calendar.

262 Further, the food resources of California were bountiful in their variety rather than in their overwhelming abundance along special lines. If one supply failed, there were a hundred others to fall back upon. If a drought withered the corn shoots, if the buffalo unaccountably shifted, or the salmon failed to run, the very existence of peoples in other regions was shaken to its foundations. But the manifold distribution of available foods in California and the working out of corresponding means of reclaiming them prevented a failure of the acorn crop from producing similar effects. It might produce short rations and racking hunger, but scarcely starvation. It may be that it is chiefly our astounding ignorance of all the more intimate and basal phases of their lives that makes it seem as if downright mortal famine had been less often the portion of the Californian tribes than of those in most other regions of the continent. Yet, with all allowance for this potential factor of ignorance in our understanding, it does appear that such catastrophes were less deep and less regularly recurring. Both formulated and experiential tradition are nearly silent on actual famines, or refer to them with rationalizing abstraction. The only definite cases that have come to cognizance, other than for a few truly desert hordes whose slender subsistence permanently hung by a thread, are among the Mohave, an agricultural community in an oasis, and among the Indians of the lower Klamath, whose habits, in their primal dependence on the salmon, approximated those of the tribes of the coasts north of California.

222 262 [252] The gathering of the acorn is like that of the pine nut; its leaching has led to the recognition of the serviceability of the buckeye once its poison is dissolved out; the grinding has stimulated the use of small hard seeds, which become edible only in pulverized form. The securing of plant foods in general is not separated by

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

the valley lakes. They were also used as a covering for the lake houses. 285

The lake houses are probably the most interesting part of the lake culture. They resembled greatly a long, wedge shaped tent. Poles having a crotch at the top were set in the ground in a more or less straight line at intervals of about eight or ten feet. In these crotches were laid other straight poles which formed a ridge against which other light poles were leaned. Against this supporting frame-work were laid the tule mats, the fiber of the tules standing upright. 342

We know from many accounts, some of them given by persons yet living, that these lake houses often reached a length of three or four hundred feet and housed a dozen or more families. The openings at the ends afforded entrance to the end apartments, the intermediate apartments having entrances at the side somewhat similar to the flap of a tent.

Transportation upon the water was by means of bundles of tules tied together in the form of rafts. From these, hunting and fishing took place. Upon a mud hearth in the forward end of these rafts, a fire was kindled and game was cooked. In this way, we are assured, parties of three or four Indians would be upon the lake for a week or ten days at a time. 501 [354]

To understand the reason for this difference between the method of living and the construction of houses of the lake tribes and the river tribes, we must consider for a moment the nature of the lakes upon which they lived. The land surrounding these lakes, particularly Tulare Lake, was almost level. The rise or fall of one foot in the level of the water in a lake would move the shore line forward or backward a distance often as great as four miles. When the shore line moved, the Indian village moved. 133

Other and more frequent disturbances were the violent winds which from time to time swept across the lakes. Three days of heavy northwest wind could drive the waters toward the south and move both shore lines south a distance of several miles. Those Indians living on the south shore of the lake would be awakened in the night by the wind or, if they were not alert, by the water, which would flood their encampment. All members of the tribe would rush about, bundling up the temporary houses and piling them upon tule rafts. Gathering up baskets of acorns and dried fish and all manner of camp equipment, they would float to higher ground. Within a few days [132]

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29

"The Indians of this country finding their food where they lived were not nomadic. They were not disposed to range, and seemed unaccustomed to intrude upon the ground which usage probably made the possession of other tribes.

"Their huts were easily built and permanent; the climate was fine, they lived mostly in the open air, and when they died they were not put in the ground but up in the branches of the trees. The climate is such that a dead animal left on the ground simply dries up and only the eye gives knowledge of its presence.

"The springs and streams hereabout were waters of the *Chauchiles* and Mariposas Rivers and the Indians of this village belonged to the Chauchiles tribe.

"On some of the higher ridges were fields of a poppy which, fluttering and tremulous on its long thin stalk, suggest the idea of a butterfly settling on a flower, and gives to this flower its name of *Mariposas*—butterflies—and the flower extends its name to the stream.

"The encounter I had here with the Indians was a premonitory symptom of the contests I afterward had with the State and Federal governments when the place became my property.

"We were only sixteen men. Keeping in the oak belt on the course I was pursuing would bring us farther among these villages, and I would surely have lost the cattle and perhaps some men and horses in attacks from these Indians. In the morning therefore I turned down one of the streams and quickly gained but a little distance on this course when an Indian was discovered riding at speed towards the plain, where the upper San Joaquin reaches the valley.

"Maxwell was ahead and not far from the Indian when he came into sight and knowing at once that his object was to bring Indians from the river to intercept us, rode for him. The Indian was well mounted but Maxwell better. With Godey and two of the Delawares I followed. It was open ground over rolling hills and we were all in sight of each other, but before we could reach them a duel was taking place between Maxwell and the Indian—both on foot, Maxwell with pistols, the Indian with arrows.

"They were only ten or twelve paces apart. I saw the Indian fall as we rode up. I would have taken him prisoner

4: Gayton E-5 (1925-1930)1946
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ship of environment to culture, and while matters such as instinct, mental level, and schools of anthropology in vogue at the time somewhat obscure the main issue of his treatise, his "reaction point of view" may still be examined profitably.

> By reaction we mean the conception that external things and relations impress the mind so as to be at least the occasion for return action. . . . The problem for us is, however, Do such stimuli or impressions determine or modify culture?[6]

Nor did Dr Boas omit the environmental factor when he said,

> The explanation of the activity of the mind of man . . . requires the discussion of two distinct problems. The first bears upon the question of unity or diversity of organization of the mind, while the second bears upon the diversity produced by the variety of contents of the mind as formed in the various social and *geographical* environments.[7]

Without emphasizing the subsistence link which already has been the chief concern of culture-environment studies, the paper in hand will demonstrate how large a part of one culture was enmeshed with its natural surroundings. Environment herein is meant to include any or all externals of the culture and the people (culture-bearers), though, naturally, culture itself and even physiology are recognized as environment to the individual. For our present purpose the Yokuts and neighboring Western Mono of the Sierra Nevada foothills may be considered culturally one in spite of linguistic and other habitual differences. Emphasis will be on foothill rather than valley Yokuts, the Wukchumni in particular as exemplifying the norm of the cultural features described.[8]

II

The seasonal round of the year had three phases in native terms which fitted with the San Joaquin valley climate: Winter (tomo´kšiu) began about November and lasted through February; Spring (tisa´miu) was roughly March through May; and Summer (haiya´di) was from June through October.[9] These were: a cold rainy season when plant life was in a productive lull and habitation was

6 Clark Wissler, *The Psychological Aspects of the Culture Environment Relation* (American Anthropologist, vol. 14, pp. 217-225, 1911).

7 Franz Boas, *The Mind of Primitive Man* (New York, 1916), p. 103; italics mine.

8 The letter Y after a tribal name denotes Yokuts, WM, Western Mono. All ethnographic material unless otherwise noted is from the author's *Yokuts and Western Mono Ethnography* (Anthropological Records, in press).

9 A fourth season, Fall (wuse'o), was mentioned only upon inquiry, if at all, by my Central Foothill informants, and I believe it to be a modern interpolation. The Northern Foothill people clearly recognized a fall season, as indicated by my own and Dr Driver's informants (Harold E. Driver, *Culture Element Distributions: VI, Southern Sierra Nevada*, Anthropological Records, vol. 1, pp. 53-154, 1937, p. 150).

4: Gayton E-5 (1925-1930)1946
NS29 Yokuts NS29

settled; next a season of warmth with stream, river, and lake floods, and stirring plant growth culminating in the massive blooming of field flowers and foothill shrubs; and then the long hot dry season of harvest seeds bringing a constant drift to temporary camps which ended with the gathering and storing of the staple acorn crop.[10]

The ceremonial round of Yokuts culture was closely fitted to the seasonal cycle of plant and animal activity. There was no winter ceremony unless possibly the oho´wiš, an indoor curing ceremony and shamanistic display involving fish and water animals.[11] This was a time for evening instruction by the telling of myths and by the forcing of boys and girls 10 to 15 years of age to rise in the night and bathe in chilly waters. Austere men concerned about their supernatural power and spiritual vigor would do the same. Indoor occupations flourished, although men hunted daily unless the weather were excessively wet and cold. Houses were patched against winds and soaking rains. Acorns were brought from main storage bins to individual store houses, thence to the dwelling to be shelled as needed. Men and women gathered in houses at dusk to drink the lime and tobacco emetic, then retired home to dream and secure supernatural benefits. By mid-December prospective datura-drinkers began to refrain from meat-eating. Shamans danced to prevent general sickness or to predict the next summer's seed crops.

In late February or early March came the first public ceremony, the drinking of tañai *(Datura meteloides)* by youths and others seeking special knowledge: dream help, second sight, or a view of their future life. This was never held later in the year because the plants were "too strong." The spectacle was attended by people of the local and adjacent communities. For the participants, the critical period was the twelve days prior to the drinking, in which a semi-fast was maintained, and the twelve following days during which meat was still tabu; at the conclusion of which time, as with all Yokuts festivities, a feast was given and meat eaten.

Soon after this (late March, April, and early May) the lavish, colorful blooming of wildflowers engaged Yokuts attention. Crowns of flowers, constructed like the shaman's feather crown, were worn by young and old of both sexes; armloads of flowers were plucked and danced to with special songs.

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10 Twelve "moons" were counted and named by both Yokuts and Western Mono, but no ethnographer has the complete record.

11 Described by both Kroeber and myself, not fully understood by either in description, meaning, or extent; not listed by Driver (A. L. Kroeber, *Handbook of the Indians of California*, Bulletin, Bureau of American Ethnology, no. 78, 1925, p. 507; Driver, *op. cit.*).

10: Beals & Hester E-4, 5 (no date) 1958
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A LACUSTRINE ECONOMY IN CALIFORNIA[1]

RALPH L. BEALS AND JOSEPH A. HESTER, JR.

IN ANOTHER PAPER we have proposed a new ecological classification of the Indians of California.[2] In this paper, we describe in more detail an example of a lake ecological type. The example is chosen because it departs widely from the usual conception of the acorn economy of the California Indians. The description will center on the Tachi, a group of southern valley Yokuts, who are the best known of the lake-based tribes.

The southern valley Yokuts, with their neighbors, the Buena Vista Yokuts, occupy the central and western portion of the San Joaquin Valley in California. The region is predominately a desert environment approximating the type of the Mohave Desert. The mean July temperature ranges from 84 degrees in the valley to approximately 78 degrees in the foothills away from the valley, but summer daily maxima frequently are above 100 degrees, while mean January temperatures are between 40 and 44 degrees. The average annual precipitation for much of the area is less than 5 inches but rises to 10 inches toward the foothills. Some minor areas may register 15 to even 20 inches in the coast range mountains to the west, although it is not known that the Yokuts utilized these areas. In the modified Köppen classification, at least 85 percent of the area has a BWh climate similar to that of the Mohave Desert.[3] Most of the remainder has hot steppe-

[1] This paper is the product of a research program on California Indian Ecology conducted at the University of California, Los Angeles by Ralph L. Beals, Director, and Joseph A. Hester, Jr., Associate Director, and a staff of assistants. We are indebted to Dr. Harold Driver, University of Indiana, for suggestions.

[2] "A New Ecological Typology of the California Indians". Paper presented at the International Congress of Anthropological and Ethnological Sciences, Philadelphia, 1956.

10: Beals & Hester E-4, 5 (no date) 1958
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132 climate (BSh), distributed mainly along the western margin and sporadically elsewhere.

134 Soils throughout most of this region are of alluvial valley or valley terrace type. Extensive areas of these are either poorly drained acid soils or are heavily saline, supporting little or no useful vegetation. [137] In the hills to the west and south, are some areas of neutral upland soils, normally favorable to the growth of hardwood trees, especially oaks. In this instance, however, these soils usually are barren because 137 of aridity. In the habitat of the Buena Vista Yokuts, there are only 96 square miles covered predominantly with hardwood trees, but this includes no oaks or other trees economically useful from the standpoint of Indian technology. In the coast ranges to the west of the southern valley Yokuts are 163 square miles occupied by woodland-grass associations (a park landscape of mixed grass and hardwoods) but the trees here are sparse with relatively few oaks. Although included in the area usually attributed to the southern valley Yokuts, there is no evidence that this upland region was exploited. Over most of the entire habitat attributed to the southern valley Yokuts a sparse desert type vegetation prevailed.[3]

133 The rather grim desert environment was mitigated by streams flowing from the mountains. Many of these, especially those draining from the high Sierra Nevada to the east were perennial. Virtually all the drainage went into three shallow basins of Tulare, Kern, and Buena Vista lakes. Only in years of unusually high precipitation in the mountains did overflow water from the lakes drain into the San Joaquin 137 River system and hence reach the ocean. Along streams and stagnant sloughs occurred some shrubs and trees and river bottoms might support lush grasses. The vegetation of primary economic importance was the tule which grew along streams and sloughs and especially in the extensive *tulares* around the marshy margins of the lakes. Tule, hispanicized from the Nahuatl *Tollin,* here is the bullrush, chiefly *Scirpus acutis.*

136 Fish, shellfish and waterfowl were the most abundant animal forms. Few deer existed in the area. The California deer is a browsing

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[3] See Weislander and Jensen for vegetation data and Storie and Weir [127] for soils data. Other environmental data are summarized from compilations made by the project on a state-wide basis, utilizing a wide variety of government documents, geographical and ethnographic reports, too numerous to list in this short paper, supplemented by spot field observations.